

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF VIRGINIA
ABINGDON DIVISION**

ELECTRO-MECHANICAL)
CORPORATION,)
Plaintiff,) Case No. 1:11CV00071
v.)
POWER DISTRIBUTION)
PRODUCTS, INC., ET AL.,)
Defendants.) **OPINION AND ORDER**
) By: James P. Jones
) United States District Judge
)

Brady J. Fulton and Isaac N. Northup, Jr., Northup McConnell & Sizemore, PLLC, Asheville, North Carolina, for Plaintiff; John D. Luken, Monika J. Hussell and Olen L. York, III, Dinsmore & Shohl LLP, Cincinnati, Ohio, and Charleston, West Virginia, and Eric R. Thiessen, McElroy, Hedges, Caldwell & Thiessen, Abingdon, Virginia, for Defendants.

In this patent infringement action, following a so-called *Markman* proceeding, I construe as a matter of law the disputed claims of the subject patent.

I

The patent at the center of this dispute, U.S. Patent No. 7,277,294 (“the ‘294 patent”) is entitled “Contactor Draw Out Tray” and owned by the plaintiff, Electro-Mechanical Corporation (“EMC”). In its Complaint, EMC claims that Power Distribution Products, Inc., Becker Mining America, Inc., and SMC Electrical Products, Inc. (collectively referred to as “defendants”), willfully infringed the

patent and induced infringement by others, all in violation of 35 U.S.C.A. § 271 (West 2001 & West Supp. 2011). Jurisdiction of this court exists pursuant to 28 U.S.C.A. §§ 1331, 1338 (West 2006). The parties have briefed and orally argued the proper construction of certain claims of the' 294 patent and the issues are ripe for decision.

II

The '294 patent sets forth inventions relating to a contactor draw out tray typically used as part of a power distribution system for longwall underground coal mining. Longwall mining involves the extraction of coal contained in large rectangular blocks. A cutting machine runs back and forth along the coal face, working under a canopy of movable roof supports. After a section of coal from the block has been mined and removed, the roof supports are moved closer to the newly cut face and the roof in the mined out area is allowed to collapse.

Excavation of the coal in the panel can be an essentially continuous operation, provided that the mining and electrical equipment is fully operational. A power distribution system for the mining typically receives electricity from an off-site source such as an electric power utility, and then provides the electricity in a usable form to the various different pieces of mining equipment. Historically, the

repair and maintenance of such power distribution systems presented a difficult task because of the rugged and demanding environments where this equipment is normally employed. As the Background of the Invention in the 294 patent explains:

Due to the extensive size of such equipment, it is impractical to evacuate defective equipment to the surface in order to provide a clean environment for the technician to effectuate the necessary repairs. Accordingly, repairs are made on site, thereby providing further opportunity for the infiltration of contaminants into the system as the technician must open the various access panels, leaving them open for extended periods of time. Moreover, the technician is left to effectuate the repairs in the austere environment. In such conditions . . . repairs remain a time consuming, labor intensive proposition. Similarly, because the equipment remains in an inoperable condition for an extended period of time, there is a concomitant loss in productivity as the equipment reliant on the electrical power is rendered useless.

('294 patent, col. 1, ll. 27-42.)

It is claimed that the inventions of the '294 patent provide significant improvements over prior longwall power distribution systems because they allow for quick repairs to the electrical equipment on site at the mining operation. The '294 patent includes contactor draw out trays that are removable. Because the contactor draw out trays are quickly and easily removed, and their components easily accessible, repairs can be made more rapidly, significantly reducing the down time of the mining equipment and increasing the overall efficiency of the

mining operation.

The '294 patent contains twenty-seven claims, with eleven independent claims and sixteen dependent claims. The claims describe different aspects of the contactor draw out tray. The structure itself is made up of a movable frame carried or supported by a stationary frame, and a disconnect mechanism mounted to the movable frame that provides selective electrical connectivity through the apparatus for downstream distribution of electricity to equipment.

Claim 1 is representative and it claims the following invention:

An apparatus for use in an electrical distribution system comprising in combination:

- a. a stationary frame supporting one or more main bus input terminals and one or more of power output terminals in spaced relation to each other such that no electrical connection is made between said main bus input terminals and said power output terminals;
- b. a movable frame slidably carried on said stationary frame and supporting one or more main bus input connectors and one or more power output connectors positioned for mating engagement with said main bus input terminal and said power supply output terminal upon selective movement of said movable frame along said stationary frame; and
- c. a disconnect mechanism mounted to said movable frame and visible from the exterior of the apparatus, said disconnect mechanism providing selective electrical connection between said main bus input connectors and said power output connectors, said

disconnect mechanism being operable from outside said apparatus, wherein said disconnect mechanism selectively operates between an open position and a closed position such that in said open position said main bus input terminal connector is electrically disconnected from said power supply output connector.

('294 patent, col. 7, ll. 20-44.) The remaining claims outline various versions of the structure described in Claim 1.

III

In this opinion, I undertake the first step in any patent infringement case — to construe the meaning and scope of the patent claims at issue. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). This process, called claim construction, is a matter of law exclusively for the court. *Id.* at 979, 984. This is distinct from the question of fact of whether the accused product infringes on the patent claims, which is the province of the jury. *Id.*

In the task of construction, claim terms “are generally given their ordinary and customary meaning.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (citation and internal quotation marks omitted). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to

a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1313. “The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation.” *Id.* “[T]he claims themselves provide substantial guidance as to the meaning of particular claim terms.” *Id.* at 1314. “Other claims of the patent . . . can also be valuable sources of enlightenment as to the meaning of a claim term.” *Id.*

The claims must also “be read in view of the specification, of which they are a part.” *Id.* at 1315 (citation and internal quotation marks omitted). “[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* at 1313. “[T]he specification is always highly relevant to the claim construction analysis” as it is the “best source for understanding” the meaning of a disputed term, “informed, as needed, by the prosecution history.” *Id.* at 1315 (citations and internal quotation marks omitted).

“The prosecution history is the ‘complete record of all the proceedings before the Patent and Trademark Office [(the “PTO”)], including any express representations made by the applicant regarding the scope of the claims.’” *Gen. Creation LLC v. Leapfrog Enters., Inc.*, 232 F. Supp. 2d 661, 665 (W.D. Va. 2002)

(quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent.” *Phillips*, 415 F.3d at 1317.

The claims, the specification, and the prosecution history are all forms of intrinsic evidence the court may rely on during claim construction. The court may also examine extrinsic evidence, but should do so with caution. “Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. “[W]hile extrinsic evidence can shed useful light on the relevant art, . . . it is less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (citation and internal quotation marks omitted).

“Extrinsic evidence is to be used for the court’s understanding of the patent, not for the purpose of varying or contradicting the terms of the claims.” *Markman*, 52 F.3d at 981. It “is not for the purpose of clarifying ambiguity in claim terminology. It is not ambiguity in the document that creates the need for extrinsic evidence but rather unfamiliarity of the court with the terminology of the art to which the patent is addressed.” *Id.* at 986. “[E]xtrinsic evidence cannot add, subtract, or vary the limitations of the claims.” *Id.* at 985. Therefore, “[t]he

district court's claim construction, enlightened by such extrinsic evidence as may be helpful, is still based upon the patent and prosecution history." *Id.* at 981.

In construing the claim terms, the court is not bound by the proposed constructions presented and argued by the parties. *See Marine Polymer Techs., Inc. v. HemCon, Inc.*, 672 F.3d 1350, 1359 n.4 (Fed. Cir. 2012) (citing *Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555 (Fed. Cir. 1995)).

IV

The specific claim terms in dispute in the 294 patent are "main bus input terminal," "main bus input connector," "power output connector," "power output terminal," "disconnect mechanism," "control panel," "receiver," "transmitter," "actuator," and "worm screw." The following phrases are also in dispute in the '294 patent: "in spaced relation to each other such that no electrical connection is made between said main bus input terminals and said power output terminals," "mounted to said movable frame," "operable from outside said apparatus," "visible from the exterior of the apparatus," and "said movable frame is keyed to said stationary frame." By applying the applicable principles of claim construction, I find the following to be the proper construction of the disputed terms.

**A. MAIN BUS INPUT TERMINAL, MAIN BUS INPUT CONNECTOR,
POWER OUTPUT CONNECTOR, AND POWER OUTPUT TERMINAL.**

The terms “main bus input terminal,” “main bus input connector,” “power output connector,” and “power output terminal” are used in numerous claims throughout the '294 patent. Specifically, “main bus input terminal” and “power output terminal” are used in Claims 1, 13, 17, 19-27; “main bus input connector” is used in Claims 1, 7, 13, 17, and 19-27; and “power output connector” is used in Claims 1, 2, 7, 13, 17, and 19-27.¹ The parties’ proposed constructions of these four terms are listed below:

Term	Defendants’ Construction	EMC’s Construction
Main bus input terminal	An electrical conductor that receives electricity, directly or indirectly, from a power distribution system, and transmits the electricity, directly or indirectly, to the main bus input connector of the movable frame	A device which receives electrical power inputs to the apparatus
Main bus input connector	An electrical conductor that receives electricity, directly or indirectly, from the main bus input terminal of the stationary	A device which receives electrical power inputs from the main bus input terminal when they are engaged

¹ In some claims, “power supply output connector” is used as a synonym for “power output connector,” and “power supply output terminal” is used as a synonym for “power output terminal.”

	frame, and transmits the electricity to another component of the movable frame	
Power output connector	An electrical conductor that receives electricity from another component of the movable frame, and transmits the electricity, directly or indirectly, to the power output terminal of the stationary frame	A device which carries electrical power to the power output terminal when they are engaged
Power output terminal	An electrical conductor that receives electricity, directly or indirectly, from the power output connector of the movable frame, and transmits the electricity, directly or indirectly, to a selected piece of equipment or feeder line	A device which carries electrical power from the apparatus

(Defs.' Opening Claim Constr. Br. 7-8.)

After careful consideration, I find that the terms should be construed as follows:

Term	Proper Construction
Main bus input terminal	An electrical conductor that receives electricity from a power distribution system, and transmits the electricity to the main bus input connector of the movable frame when engaged
Main bus input connector	An electrical conductor that receives electricity from the main bus input terminal of the stationary frame, and transmits the electricity to another component of

	the movable frame when engaged
Power output connector	An electrical conductor that receives electricity from another component of the movable frame, and transmits the electricity to the power output terminal of the stationary frame when engaged
Power output terminal	An electrical conductor that receives electricity from the power output connector of the movable frame, and transmits the electricity to a selected piece of equipment or feeder line when engaged

These constructions closely follow the defendants' proposals, but for the omission of "directly or indirectly"² and the addition of "when engaged" to the conclusion of each definition.

The given constructions for these terms are consistent with the claim language and specification of the '294 patent. The '294 patent describes an electrical pathway that can either be in a closed, conductive condition, or in an open, disconnected condition. Specifically, the claims and specification portray an electrical pathway that encompasses (1) connection of a "main bus input terminal," which receives electricity from a power distribution system and is located on the stationary frame, with a "main bus input connector" located on the movable frame; (2) connection of a "main bus input connector" with a "power output connector"

² The defendants include the non-limiting phrase "directly or indirectly" in its proposals in order to allow for the flow of electricity either directly or via some intervening component, such as cabling. However, I find that inclusion of "directly or indirectly" in the definition of these four terms is improper, because the phrase does not appear in the claim language or the specification of the '294 patent.

also located on the movable frame; and (3) connection of a “power output connector” with a “power output terminal,” which is located on the stationary frame and carries the electricity from the apparatus to a selected piece of electrical equipment or feeder line. ('294 patent, col. 2, ll. 63-65; col. 3, ll. 1-2; col. 7, ll. 22-33.) When the connectors and terminals are mated to establish the electrical pathway, it is clear that each terminal and connector performs *two* roles — receives electricity from an upstream source and transmits the electricity to a downstream recipient. Thus, the proper construction of each of the four terms is interdependent upon the other elements in the electrical pathway.

While EMC’s proposed constructions are not untrue, they are noticeably incomplete. EMC’s constructions only recite *one* role for each of the elements — either receiving or transmitting electricity, but not both, which divorces the physical and electrical interrelationship of the elements. For example, EMC suggests that the “main bus input connector” is simply “a device which *receives* electrical power inputs from the main bus input terminal.” This ignores the fact that the “main bus input connector” also *carries* electricity to the “power output connector.” Similarly, EMC argues that the “power output connector” is “a device which *carries* electrical power to the power output terminal,” which disregards its additional role of *receiving* electricity from the “main bus input connector.” The

defendants' proposed definitions, on the other hand, provide clear descriptions of the interrelationship between the elements of the electrical pathway as discussed in the '294 patent.

EMC argues that the defendants' proposed constructions improperly imply that the four devices are always transmitting electricity, rather than only transmitting electricity when in a closed, conductive condition. However, EMC's suggested definitions also assume that the apparatus is in the closed position. Otherwise, the electrical current would be interrupted and no electricity would be "carried" or "received" as recited in EMC's constructions. Regardless, the addition of the clause "when engaged" to the end of each term's definition clarifies that electricity is only transmitted when the relevant devices are in mating engagement, eliminating any confusion over the issue.

B. DISCONNECT MECHANISM.

The term "disconnect mechanism" is used in Claims 1-6, 13, 17, and 19-27. EMC suggests that the term should be construed as "a mechanical assembly that can connect and disconnect an electrical circuit." (EMC's Opening Br. on Claim Constr. 16.) The defendants offer a more detailed definition, arguing that the term means "a collection of components which in one or more combinations can control whether electricity can or cannot flow, directly or indirectly, from the main bus

input connector of the movable frame to the power output connector of the movable frame, one or more of which may indicate whether electricity can or cannot flow from the main bus input connector to the power output connector, at least one of such components providing the physical interface through which an individual user operates the mechanism to control whether electricity can so flow from the main bus input connector to the power output connector.” (Defs.’ Opening Claim Constr. Br. 12.)

I find that the term “disconnect mechanism” should be construed as “a collection of components which in one or more combinations can control whether electricity can or cannot flow from the main bus input connector of the movable frame to the power output connector of the movable frame, one or more of which may indicate whether electricity can or cannot flow from the main bus input connector to the power output connector.” This construction follows the defendants’ proposal, except for the omission of both the “directly or indirectly” phrases³ and the final limiting clause of the defendants’ definition.

EMC suggests that a more simple construction of “disconnect mechanism” is appropriate, arguing that the term is well known to those ordinarily skilled in the

³ As previously mentioned, I find that inclusion of “directly or indirectly” is improper, as the phrase does not appear anywhere in the claim language or the specification of the ’294 patent.

art. I disagree. The term “disconnect mechanism” is not specifically defined in the Authoritative Dictionary of IEEE Standard Terms (“IEEE Dictionary”), a well-regarded reference published by the Institute of Electrical and Electronics Engineers, and EMC’s proposed definition provides very little guidance as to the term’s meaning. EMC’s suggested construction essentially states that a “disconnect mechanism” is a mechanism that connects and disconnects, offering no more clarity than provided by the term itself. Because what constitutes a “disconnect mechanism” will be a crucial element in any upcoming litigation pertaining to the ’294 patent, it is important to provide a clear, specific definition of the term.

The defendants’ proposed construction more appropriately summarizes the description of “disconnect mechanism” given in the ’294 patent. First, the claims and specification contemplate that a “disconnect mechanism” has several different components that collectively work in combination to perform its main purpose, which is to control the selective electrical conductivity between the input and output connectors. (’294 patent, col. 3, ll. 37-63; col. 7, ll. 34-44.) The inclusion of the phrase “a collection of components which in one or more combinations can control whether electricity can or cannot flow from the main bus input connector of the movable frame to the power output connector of the movable frame” simply

follows the patent language and identifies that a “disconnect mechanism” is a collection of components or parts that can control electrical flow in multiple different ways. This is not controversial, as EMC has conceded that a “disconnect mechanism” has multiple parts that work together in one or more different combinations.⁴

Second, the defendants’ proposed construction that “one or more [components] of which may indicate whether electricity can or cannot flow from the main bus input connector to the power output connector,” is also proper. This phrase is not limiting, as it does not recite a required element of the “disconnect mechanism” but instead uses the word “may” to clarify that such an indicator is an optional component but that, when it is present, it is part of the “disconnect mechanism.” The specification supports this position, teaching that one component of the disconnect mechanism may indicate the open or closed status of the selective electrical connection. (’294 patent, col. 4, ll. 6-9.)

The prosecution history also supports the optional nature of this limitation. During the prosecution, the Examiner initially rejected many of the claims as anticipated by another patent, U.S. Patent No. 5,334,808 (the “Bur patent”) entitled

⁴ EMC acknowledges in its brief that a “disconnect mechanism” has “a part” that is visible, indicating that there are other “parts” of the “disconnect mechanism.” (EMC’s Opening Br. on Claim Constr. 19.)

“Draw-Out Molded Case Circuit Breaker,” which similarly disclosed a “disconnect mechanism” visible from outside the apparatus. (Defs.’ Opening Claim Constr. Br. Ex. 5 at 2-3.) However, EMC amended its original Claim 25 (which is now Claim 22) to require visibility of the selective electrical connection itself, successfully distinguishing the claim from the Bur patent, which only required visibility of a “mechanical indication” of whether there was an electrical connection. Because this narrow limitation is only found in Claim 22, the visibility required of the “disconnect mechanism” in the other asserted claims is not so limited, but instead requires visibility of a component indicative of such an electrical connection. *See, e.g., Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) (noting that the use of different words and phrases in the claims of the same patent implies different meanings). Thus, the defendants’ suggested language clarifies that such an indicator is a component of the “disconnect mechanism” when it is present.

Finally, the defendants urge the court to define “disconnect mechanism” to necessarily include a component “providing the physical interface through which an individual user operates the mechanism to control whether electricity can so flow from the main bus input connector to the power output connector.” I find that

inclusion of this phrase is improper because it seeks to import a limitation that is not applicable to all of the relevant claims.

The defendants attempt to support this added limitation by noting that Claims 1, 13, 17, 19, 20 and 22 additionally require that the “disconnect mechanism” be operable from outside the claimed apparatus. Thus, they argue that some component of the “disconnect mechanism” must necessarily provide an interface through which an individual user can change the “disconnect mechanism” between the open and closed positions. However, this argument is flawed. The term “disconnect mechanism” also appears in Claims 23-27; but, unlike Claims 1, 13, 17, 19, 20, and 22, these claims do not include the limiting language that the “disconnect mechanism” must be operable from outside the claimed apparatus. As the Federal Circuit noted in *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1362 (Fed. Cir. 1998), it is “improper to import [a] limitation from one claim into another claim lacking the limitation.” Therefore, I decline to include this limitation in the general definition of “disconnect mechanism.”

Accordingly, I find that the term “disconnect mechanism” means “a collection of components which in one or more combinations can control whether electricity can or cannot flow from the main bus input connector of the movable frame to the power output connector of the movable frame, one or more of which

may indicate whether electricity can or cannot flow from the main bus input connector to the power output connector.”

C. CONTROL PANEL.

Claims 9, 10, 11, 13, 14, and 15 all include the term “control panel” in the body of the claims. EMC argues that the term should be construed using its ordinary meaning as “(1) An assembly of man/machine interface devices. [or] (2) The part of a console that contains switches, pushbuttons and indicators.” (EMC’s Opening Br. on Claim Constr. 20-21.) The defendants argue that the term should be construed as “a panel which has a device capable of controlling the flow of electricity through the apparatus, which panel may include monitoring displays, instruments or devices associated with the condition of the apparatus or parameters for the electricity carried therein, and may further include communication devices.” (Defs.’ Opening Claim Constr. Br. 23.)

I find that EMC’s definition is indeed the customary and ordinary meaning of “control panel” ascribed by one ordinarily skilled in the art of electrical distribution systems. For example, the IEEE Dictionary defines “control panel” the same as EMC’s proposed construction. IEEE Press, *Authoritative Dictionary of IEEE Standard Terms 235* (7th ed. 2000). Furthermore, I find that there is no indication in the body of the claims or in the specification that the construction of

“control panel” should be anything other than its ordinary meaning to those of ordinary skill in the art.

The defendants’ proposed construction improperly incorporates limitations found only in specific claims into the general definition of “control panel.” For example, Claim 13 of the ’294 patent claims “a control panel for *monitoring* an electrical condition of said apparatus.” (’294 patent, col. 8, ll. 37-38 (emphasis added).) In contrast, however, dependent Claim 9 only claims “a control panel *communicating said signal* to said contactor.” (’294 patent, col. 8, ll. 4-5 (emphasis added).) Thus, under the principles of claim differentiation, these are two different types of “control panels” that must be construed differently. *See Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004). Yet, the defendants add both of these limitations into their proposed construction, urging an overly narrow definition of “control panel” that requires both monitoring displays and communication devices.

The defendants argue that their construction is not unduly narrow. They point out that, while their proposed construction *requires* the “control panel” to have a controlling device, it *may* but need not have indicators such as monitoring displays or communication devices. It is true that the defendants’ proposed construction uses the word “may” when discussing the inclusion of monitoring

displays or communication devices. However, as demonstrated in the claim language previously recited, these possible features are already adequately described within the relevant claim language. I find that there is no need to repeat them in the general definition of “control panel,” as such repetition would inappropriately render the claim language meaningless. *See, e.g., Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1563 (Fed. Cir. 1991) (noting generally that claims are interpreted with an eye toward giving effect to all terms in the claim).

Given this understanding, I find that the term “control panel” should be construed using its ordinary meaning as “(1) an assembly of man/machine interface devices or (2) the part of a console that contains switches, pushbuttons and indicators.”

D. RECEIVER AND TRANSMITTER.

The terms “receiver” and “transmitter” are included in Claims 12 and 16, respectively. EMC argues that no construction of these terms is necessary, or in the alternative, that “receiver” means “a device which receives a signal” and “transmitter” means “a device which transmits a signal.” (EMC’s Rebuttal Br. on Claim Constr. 19.) The defendants contend that the terms should be construed as

“a wireless radio receiver” and “a wireless radio transmitter.” (Defs.’ Opening Claim Constr. Br. 24.)

I find that the term “receiver” should be construed as “a wireless radio receiver” and the term “transmitter” should be construed as “a wireless radio transmitter.” One of ordinary skill in the art would understand that receivers and transmitters receive and transmit signals. EMC does not dispute this, but instead argues that the '294 patent explicitly contemplates a *wired* connection because it does not specifically use the words “wireless” or “radio.”

EMC’s argument is incorrect. The claim language makes clear that the terms “receiver” and “transmitter” are alternatives to hard wired harness structures and communications. For example, Claim 11 describes an apparatus wherein the communication means consists of a wire harness attached to a control panel and electrical distribution system, while Claim 12 describes an apparatus wherein the communication means is simply a receiver. ('294 patent, col. 8, ll. 11-15.) Similarly, Claim 15 describes an apparatus wherein the communication means is a wire harness, whereas in Claim 16 the communication means is a transmitter. ('294 patent, col. 8, ll. 43-47.)

The specification language also supports the defendants’ proposed construction of these terms. The specification states:

Additionally, controller 52 may communicate its electrical condition and status to a host power distribution center via electrical, fiber optic or other suitable cabling. It may also receive and respond to control signals via such cables. Alternatively, the apparatus may contain a transmitter and/or receiver to accomplish the same end.

('294 patent, col. 6, ll. 23-28.) Thus, it is apparent that a “receiver” and “transmitter” are provided as wireless alternatives to the hard-wired cabling described, and that they are to “accomplish the same end” as the hard-wired cabling, which is to communicate the electrical condition and status to the host power distribution center. Given this understanding, I find that the defendants’ proposed constructions of the terms “receiver” and “transmitter” are proper.

E. ACTUATOR.

Claims 17 and 18 include the term “actuator” in the body of the claims. EMC suggests that “actuator” should be construed as its ordinary meaning, “a mechanical device for moving or controlling something.” (EMC’s Opening Br. on Claim Constr. 22.) The defendants argue that “actuator” should be construed as “a mechanism that introduces motion of an object, and may prevent motion.” (Defs.’ Opening Claim Constr. Br. 25.)

While the two proposed constructions are similar, I find that the term “actuator” should be construed as “a mechanical device for moving or controlling something.” This construction is identical to the definition of “actuator” found in

Merriam-Webster's Collegiate Dictionary 12 (10th ed. 2001), and the defendants have pointed to no evidence suggesting that the term should have any other than its plain and ordinary meaning. Furthermore, this construction is consistent with the way that “actuator” is utilized in the '294 patent. For example, Claim 17 provides that the “actuator” can be used to position the movable frame relative to the stationary frame. ('294 patent, col. 8, ll. 61-63.) The specification also contemplates that the “actuator” is a device for engaging or disengaging the movable frame relative to the stationary frame. ('294 patent, col. 5, ll. 49-59.) Thus, consistent with the Webster’s definition, the '294 patent contemplates that the “actuator” is a mechanical device that helps move or control the position of the movable frame with respect to the stationary frame.

Accordingly, I find that the term “actuator” is properly construed as “a mechanical device for moving or controlling something.” *See Lazare Kaplan Int'l, Inc. v. Photoscribe Techs., Inc.*, 628 F.3d 1359, 1373 (Fed. Cir. 2010) (“[C]ourts are free to consult dictionaries and may . . . rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.”) (citation and internal quotation marks omitted).

F. WORM SCREW.

The term “worm screw” appears only once in the '294 patent. Claim 17 describes an apparatus comprising, among other things, a movable frame that is positioned relative to the stationary frame by an actuator, and Claim 18 claims “the apparatus of [C]laim 17 wherein said actuator comprises a worm screw.” ('294 patent, col. 8, ll. 48-63; col. 9, ll. 3-4.) EMC argues that the term “worm screw” should be construed using its alleged plain and ordinary meaning as “a fastener that uses threads to interlock with another component.” (EMC’s Opening Br. on Claim Constr. 23.) The defendants contend that the term should be construed as “a fastener traversing the front panel of the movable frame and the front end support of the stationary frame, the fastener having threads along the entirety of its shaft to mechanically engage an aperture provided in the front end support of the stationary frame to actuate advancement or retraction of the movable frame relative to the stationary frame. (Defs.’ Opening Claim Constr. Br. 26.)

I find that the term “worm screw” means “a fastener traversing the front panel of the movable frame and the front end support of the stationary frame, the fastener having threads along its shaft to mechanically engage an aperture provided in the front end support of the stationary frame to actuate advancement or retraction of the movable frame relative to the stationary frame.” This construction

essentially mirrors the defendants' proposal, except it does not require that the fastener have threads along the *entirety* of its shaft.

EMC argues that there is no need to construe the term "worm screw" aside from using the alleged ordinary meaning of "screw." It contends that a "worm screw" is merely a "screw," and that one ordinarily skilled in the art will understand the term to mean "a fastener that uses threads to interlock with another component." However, this construction is flawed for two main reasons. First, EMC's construction ignores the established canon of claim construction stating that courts interpret claims with an eye toward giving effect to all of the terms in the claim. *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006). EMC's proposed construction renders the word "worm" superfluous and eliminates any meaning that it imparts upon the general structure "screw." If EMC had intended to broadly claim any "screw," it could have done so by not reciting the modifier "worm." *See, e.g., In re Gabapentin Patent Litig.*, 503 F.3d 1254, 1263 (Fed. Cir. 2007). Instead, EMC used the modifier "worm," which strongly implies that the term "worm screw" is more than just a "screw."

Second, the term "worm screw" requires a more detailed construction because EMC's particular use of this term is different than its ordinary understanding. Common usage of the term "worm screw" is as one part of a worm

gear. Houghton Mifflin Co., *American Heritage Dictionary of the English Language* 1475 (4th ed. 2009). However, neither the claims nor the specification of the '294 patent identify an associated worm gear with the claimed “worm screw.” By departing from the usual understanding of “worm screw,” the patentee has used the term in an exceptional way and thus its ordinary meaning is not invoked. Therefore, I must look to the claims and specification to properly construe the term.

In the only description addressing the “worm screw,” the specification describes the “worm screw” by its function, which is to open or close the movable frame relative to the stationary frame. Specifically, the specification states:

. . . the apparatus may be provided with an actuator 56, such as a worm screw, operatively coupled between front panel 50 and stationary frame 20 such that actuator 56 will disengage movable frame 30 from stationary frame 20. Actuator 56 may also be utilized in a reverse direction to draw the movable frame 30 into stationary frame 20 to securely close the apparatus and ensure full engagement of terminals 24 and 25 with connectors 34 and 35.

('294 patent, col. 5, ll. 49-58.) This description, coupled with Figure 7 in the '294 patent, makes it clear that the fastener must traverse the movable frame and the stationary frame in order to effectuate positioning of the movable frame relative to the stationary frame. Thus, the section of defendants' proposed construction that describes the “worm screw” as “a fastener traversing the front panel of the

movable frame and the front end support of the stationary frame, the fastener having threads along . . . its shaft to mechanically engage an aperture provided in the front end support of the stationary frame to actuate advancement or retraction of the movable frame relative to the stationary frame,” is consistent with the term as used in the '294 patent’s claims and specification.

The defendants also argue that a “worm screw” cannot open and close the movable frame relative to the stationary frame unless it has threads along the *entirety* of its shaft. While it is true that Figure 7 shows an elongated shaft with threads along the *visible* section of the shaft, it is impossible to know whether the part of the shaft not seen in the illustration also has threads. ('294 patent, fig. 7.) Furthermore, the actual claim language and the specification say nothing about the fastener having threads along the entirety of its shaft. A “worm screw” could still properly perform its function of opening and closing the movable frame if only part of its shaft was threaded. Accordingly, I decline to include this limitation in the term’s construction.

G. IN SPACED RELATION TO EACH OTHER SUCH THAT NO ELECTRICAL CONNECTION IS MADE BETWEEN SAID MAIN BUS INPUT TERMINALS AND SAID POWER OUTPUT TERMINALS.

Claims 1, 13, 17, and 19 of the '294 patent include the phrase “in spaced relation to each other such that no electrical connection is made between said main

bus input terminals and said power output terminals.” EMC argues that no construction is necessary or, in the alternative, that the phrase should be construed as “the main bus input terminals and power output terminals are spaced such that there is no electrical connection made between them.” (EMC’s Opening Br. on Claim Constr. 12.) Originally, the defendants argued that the phrase should be construed as “where each main bus input terminal is sufficiently far away from every power output terminal so that electrons do not flow between the main bus input terminal and any power output terminal (other than through the connectors of the movable frame); and each power output terminal is sufficiently far away from every main bus input terminal so that electrons do not flow between the power output terminal and every main bus input terminal (other than through the connectors of the movable frame).” (Defs.’ Opening Claim Constr. Br. 11.) However, at oral argument, the defendants offered an amendment to the plaintiff’s proposed construction, contending that the phrase should be construed as “the main bus input terminals and power output terminals are spaced such that there is no electrical connection made between them other than through the connectors of the movable frame.” EMC indicated that it was in agreement with the defendants’ proposed amendment to its construction.

I will adopt the agreed upon construction and find that “in spaced relation to each other such that no electrical connection is made between said main bus input terminals and said power output terminals” means “the main bus input terminals and power output terminals are spaced such that there is no electrical connection made between them other than through the connectors of the movable frame.” This definition simply adds the phrase “other than through the connectors of the movable frame” to EMC’s proposed construction. This is consistent with the specification, which states:

Terminals 24 and 25 are supported in spaced relation to each other such that no electrical connection is made between main bus input terminals 24 and power supply output terminals 25 unless an electrical connection is made through the other electrical components of the apparatus. That is, terminals 24 and 25 are mounted to the apparatus such that they are electrically isolated from each other and the apparatus.

(‘294 patent, col. 3, ll. 2-9.) Thus, I find that the agreed-upon construction is a reasonable one.

H. MOUNTED TO SAID MOVABLE FRAME.

The phrase “mounted to said movable frame” is used in Claims 1, 13, 17, 19, 20, and 22-27 of the ‘294 patent as an additional requirement pertaining to the “disconnect mechanism.” EMC argues that there is no need to construe this phrase. (EMC’s Opening Br. on Claim Constr. 18.) On the other hand, the

defendants contend that “mounted to said movable frame” should be construed as “where the components of the disconnect mechanism are all affixed to and supported by the structure of the movable frame, directly or through one or more other components of the disconnect mechanism.” (Defs.’ Opening Claim Constr. Br. 17.)

I agree with the plaintiff that the phrase “mounted to said movable frame” does not need construction. The phrase is easily understandable to one ordinarily skilled in the art. Moreover, there is no indication in the body of the claims or in the specification that the construction of “mounted to said movable frame” should be anything other than its plain and ordinary meaning.

The defendants argue that “mounted to said movable frame” should be understood to require that the entire disconnect mechanism, not just some of its components, must be directly or indirectly mounted to (or affixed to) the movable frame. However, this interpretation attempts to impose a narrowing limitation that is unsupported by the claim language or the specification. Contrary to the defendants’ assertion, there is nothing in the ’294 patent explicitly suggesting that “all” of the components of the disconnect mechanism must be affixed to the movable frame.⁵ The ’294 patent simply requires “a disconnect mechanism

⁵ EMC also argues that one embodiment in the specification teaches that at least

mounted to said movable frame.” ('294 patent, col. 7, ll. 34-35.) If EMC wanted to limit its invention to one in which “all” of the components of the disconnect mechanism were mounted to the movable frame, it could have written the claims in such a manner. Because EMC did not limit its invention in this fashion, the court should not rewrite the claims in the narrow manner suggested by the defendants. *See In re Shoner*, 341 F. App'x 642, 646 (Fed. Cir. 2009) (unpublished) (noting that claim terms should be given their broadest reasonable interpretation consistent with the specification).

Accordingly, I find that “mounted to said movable frame” means just that — “mounted to said movable frame” — and no additional construction is necessary.

I. OPERABLE FROM OUTSIDE SAID APPARATUS.

The phrase “operable from outside said apparatus” is used in Claims 1, 13, 17, 19, 20, and 22 of the '294 patent as an additional requirement regarding the “disconnect mechanism.”⁶ EMC contends that no construction is necessary or, in the alternative, that the phrase means “the disconnect mechanism can be operated

one component of the disconnect mechanism, the mechanical interlock, is mounted to the stationary frame rather than to the movable frame, directly contradicting the defendants’ proposed construction. This argument is incorrect. While the specification states that the mechanical interlock *engages* the stationary frame, it is clear that the mechanical interlock is still indirectly *mounted* to the movable frame. ('294 patent, col. 4, ll. 37-45.)

⁶ The term “operable from external said apparatus,” is used as a synonym for “operable from outside said apparatus” in Claim 22.

or used from the outside of the apparatus.” (EMC’s Opening Br. on Claim Constr. 19.) The defendants argue that the phrase should be construed as “capable of being controlled by an individual user engaging the component of the disconnect mechanism that provides the physical interface to control whether electricity can flow from the main bus input connector to the power output connector, said component being accessible on the exterior surface of the apparatus.” (Defs.’ Opening Claim Constr. Br. 21.)

I find that the phrase “operable from outside said apparatus” does not need to be construed. As stated by the Federal Circuit in *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1373 (Fed. Cir. 2004), “[t]hese are ordinary, simple English words whose meaning is clear and unquestionable.” There is no indication that their use in this particular context changes their meaning. They mean what they say — the disconnect mechanism can be operated or used from the outside of the apparatus.

The defendants argue that a more descriptive definition is necessary in order to explain precisely how the disconnect mechanism is “operable from outside said apparatus.” In particular, the defendants contend that this language means that the component of the disconnect mechanism that controls the flow of electricity must be “accessible on the exterior surface of the apparatus.” However, this limitation

appears nowhere in the claim language of the '294 patent. Instead, the defendants attempt to import an embodiment from the specification into the claim. The specification describes a disconnect mechanism that encompasses a lever on the surface of the movable frame. The defendants argue that, because this particular embodiment is shown as “accessible on the exterior surface of the apparatus,” then *all* disconnect mechanisms must be limited in this respect. However, the defendants have pointed to nothing in the specification that suggests that EMC’s invention is limited to this single embodiment. Thus, the defendants’ proposed construction must be rejected. *See JWW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005) (noting that a patent-construing court will not import limitations into claims from embodiments appearing only in the written description, even when a specification describes only a single embodiment, unless the specification makes clear that the patentee intends for the claims and the embodiments in the specification to be strictly coextensive).

J. VISIBLE FROM THE EXTERIOR OF THE APPARATUS.

Claims 1, 13, 17, 19, and 20 utilize the phrase “visible from the exterior of the apparatus.” EMC argues that the phrase should be construed as “where at least one component of the disconnect mechanism inside the movable frame indicates whether an electrical connection can be made or cannot [be] made between the

main bus input connector and the power output connector, and such component is observable from the exterior of the apparatus.” (EMC’s Post-Hr’g Br. Concerning Additional Legal Auths. 1.) The defendants agree with EMC’s proposed construction, but for the restriction that the visible component of the disconnect mechanism must be “inside the movable frame.” (Defs.’ Resp. to Pl.’s Post-Hr’g Claim Constr. Br. 2-3.)

I find that “visible from the exterior of the apparatus” should be construed as “where at least one component of the disconnect mechanism indicates whether an electrical connection can be made or cannot be made between the main bus input connector and the power output connector, and such component is observable from the exterior of the apparatus.” This construction allows the visible component of the disconnect mechanism to be positioned either on the inside *or* the outside of the movable frame, as argued by the defendants.

EMC contends that the restrictive language “inside the movable frame” is necessary in order to preserve the validity of the affected claims. However, construction to preserve validity is a last resort, not a first principle. *See MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1332 (Fed. Cir. 2007). The doctrine of construing claims to preserve their validity is applicable only if a claim is still ambiguous after all the available tools of claim construction have been

applied. *Phillips*, 415 F.3d at 1327; *see also Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1377 (Fed. Cir. 2005). The phrase at issue is not ambiguous. Thus, it can be construed without the need to consider whether one possible construction would render the claim invalid while the other would not.

The claim language, specification, and prosecution history all clearly illustrate that “visible from the exterior of the apparatus” does not require the visible component of the disconnect mechanism to be located “inside the movable frame.” For instance, the specification explicitly discloses a disconnect mechanism in which the component that indicates the connectivity status is visible from the exterior of the apparatus precisely because it is *outside* the movable frame. ('294 patent, col. 3, ll. 64–col. 4, ll. 6; Figs. 1-4.) Particularly, the specification describes a disconnect mechanism that comprises an actuating lever coupled to a switch gear conducting arm to operate the arm between a closed, conductive position and an open, disconnected position. (*Id.*) When the disconnect mechanism is closed, the actuating lever is in an “up” position, and when the disconnect mechanism is open, the actuating lever is in a “down” position. The lever is visible from the exterior of the apparatus, indicative of the electrical status of the apparatus, and located on the *outside* of the movable frame. EMC’s proposed construction would improperly exclude this preferred

embodiment. *See AstraZeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1051 (Fed. Cir. 2010) (noting that claims should generally not be interpreted in a manner that excludes embodiments disclosed in the specification).

Moreover, the prosecution history supports the defendants' construction. As originally filed, Claim 1 recited a disconnect mechanism "visible from the exterior of the apparatus." As previously discussed, during prosecution, the Examiner initially rejected all independent claims, including Claim 1, as anticipated by the Bur patent.⁷ (Defs.' Opening Claim Constr. Br. Ex. 5 at 2-3.) The Examiner stated that the Bur patent similarly disclosed an apparatus having "a disconnect mechanism 16 mounted to said movable frame and visible from the exterior of the apparatus" (*Id.*) Thus, the disconnect mechanism in Bur necessarily satisfied the visibility element recited in Claim 1 of the '294 patent. However, the illustrations in the patent clearly show that the disconnect mechanism in Bur was physically *outside* the movable frame. (Defs.' Opening Claim Constr. Br. Ex. 4, Figs. 1, 2, 10.) Accordingly, the Examiner understood the limitation "visible from the exterior of the apparatus" in Claim 1 of the '294 patent to include a mechanical indication that is located *outside* of the movable frame.

⁷ EMC ultimately added other limitations to Claim 1 in order to overcome Bur. However, the added limitations in Claim 1 are unrelated to the visibility requirement.

Therefore, I find that “visible from the exterior of the apparatus” means “where at least one component of the disconnect mechanism indicates whether an electrical connection can be made or cannot be made between the main bus input connector and the power output connector, and such component is observable from the exterior of the apparatus.”

K. SAID MOVABLE FRAME IS KEYED TO SAID STATIONARY FRAME.

The phrase “said movable frame is keyed to said stationary frame” appears in Claim 19 of the '294 patent. Claim 19 states:

An apparatus for use in an electrical distribution system comprising in combination:

...

(b) a movable frame slidably carried on said stationary frame and supporting one or more main bus input connectors and one or more power output connectors positioned for mating engagement with said main bus input terminal and said power supply output terminal upon selective movement of said movable frame along said stationary frame, wherein *said movable frame is keyed to said stationary frame* such that said movable frame is mountable to said stationary frame only when a set of electrical components mounted to said movable frame are compatible with a set of desired operating parameters for said electrical distribution system

('294 patent, col. 9, ll. 5-23 (emphasis added).) EMC contends that the phrase does not need construction or, in the alternative, that the term “keyed” should be construed to mean “coordinated” or “harmonized.” (EMC’s Opening Br. on Claim

Constr. 24.) The defendants argue that the phrase “said movable frame is keyed to said stationary frame” should be construed as “the movable frame and stationary frame have corresponding elements such that, when the connectors of the movable frame are matingly engaged with the terminals of the stationary frame, the physical contact between such corresponding elements generates an electrical signal that is used by the apparatus to both (a) confirm that the movable frame is matingly engaged with the stationary frame, and (b) discern whether or not the movable frame has a set of electrical components compatible with the stationary frame.” (Defs.’ Opening Claim Constr. Br. 27.)

I find that the phrase “said movable frame is keyed to said stationary frame” does not need to be construed. The defendants argue that additional construction is necessary to clarify that “keying” requires both physical mating and compatibility of the electrical components of the movable frame with the power distribution system. For instance, the specification plainly contemplates that the movable frame is not “keyed” to the stationary frame unless it *both* physically fits into the stationary frame *and* has a set of electrical components that are compatible with those of the stationary frame and, in turn, with the desired operating parameters of the power distribution system. ('294 patent, col. 6, ll. 41-53.) The defendants contend that without further construction, the phrase “said movable frame is keyed

to said stationary frame” insinuates that only physical mating of the movable frame with the stationary frame, regardless of any differing electrical attributes, is required for the two frames to be “keyed.”

However, from reading the phrase in the context of the surrounding claim language, it is clear to one ordinarily skilled in the art that the movable frame is not “keyed” to the stationary frame unless it has a set of compatible electrical components. The relevant claim language specifically states that the movable frame is “keyed” to the stationary frame “only when a set of electrical components mounted to said movable frame are compatible with a set of desired operating parameters for said electrical distribution system.” ('294 patent, col. 9, ll. 19-23.) The defendants attempt to incorporate these later parts of the claim language in their proposed construction, yet this inappropriately renders the claim language repetitive and meaningless. *See, e.g., Unique Concepts, Inc.*, 939 F.2d at 1563.

Accordingly, I find that no construction is necessary of the phrase “said movable frame is keyed to said stationary frame.”

V

For the foregoing reasons, it is **ORDERED** that the disputed terms of the '294 patent are properly construed as follows:

1. “Main bus input terminal” means “an electrical conductor that receives electricity from a power distribution system, and transmits the electricity to the main bus input connector of the movable frame when engaged”;
2. “Main bus input connector” means “an electrical conductor that receives electricity from the main bus input terminal of the stationary frame, and transmits the electricity to another component of the movable frame when engaged”;
3. “Power output connector” means “an electrical conductor that receives electricity from another component of the movable frame, and transmits the electricity to the power output terminal of the stationary frame when engaged”;
4. “Power output terminal” means “an electrical conductor that receives electricity from the power output connector of the movable frame, and transmits the electricity to a selected piece of equipment or feeder line when engaged”;
5. “Disconnect mechanism” means “a collection of components which in one or more combinations can control whether electricity can or cannot flow from the main bus input connector of the movable frame to the power output connector of the movable frame, one or more of which may indicate whether electricity can or cannot flow from the main bus input connector to the power output connector”;
6. “Control panel” means “(1) an assembly of man/machine interface devices or (2) the part of a console that contains switches, pushbuttons, and indicators”;
7. “Receiver” means “a wireless radio receiver” and “transmitter” means “a wireless radio transmitter”;
8. “Actuator” means “a mechanical device for moving or controlling something”;
9. “Worm screw” means “a fastener traversing the front panel of the movable frame and the front end support of the stationary frame, the fastener having

threads along its shaft to mechanically engage an aperture provided in the front end support of the stationary frame to actuate advancement or retraction of the movable frame relative to the stationary frame”;

10. “In spaced relation to each other such that no electrical connection is made between said main bus input terminals and said power output terminals” means “the main bus input terminals and power output terminals are spaced such that there is no electrical connection made between them other than through the connectors of the movable frame”;
11. “Mounted to said movable frame” means “mounted to said movable frame”;
12. “Operable from outside said apparatus” means “operable from outside said apparatus”;
13. “Visible from the exterior of the apparatus” means “where at least one component of the disconnect mechanism indicates whether an electrical connection can be made or cannot be made between the main bus input connector and the power output connector, and such component is observable from the exterior of the apparatus”; and
14. “Said movable frame is keyed to said stationary frame” means “said movable frame is keyed to said stationary frame.”⁸

ENTER: July 18, 2012

/s/ James P. Jones
United States District Judge

⁸ Prior to oral argument, the parties agreed upon proposed constructions for the claim terms “contactor,” “desired operating parameters,” and “selective electrical connection visible from outside said apparatus.” I find that the parties’ agreed-upon constructions are reasonable. Thus, these terms are properly construed as follows: “contactor” means “a device for repeatedly establishing and interrupting an electrical power current,” “desired operating parameters” means “a set of properties whose values determine the characteristics or behavior of something,” and “selective electrical connection visible from outside said apparatus” means “at least one component of the disconnect mechanism is visible from the exterior of the apparatus so that an individual can observe physical separation of the conductors.”